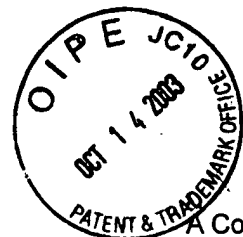


Description

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A Container

This invention relates to containers.

Containers formed of plastics material are in abundant use in present day marketing, particularly in self-service stores where they have several advantages over traditional means of packaging goods. One such use of plastics containers is for packaging foodstuffs with the advantage of preventing the handling of the food by customers before actual purchase.

However, it is found that, although most manufactured foods, e.g. biscuits and cakes, store satisfactorily in such containers, fresh foods such as soft fruits, tomatoes and some vegetables have a very limited life when kept in a lidded container. The reason for this is that bacteria which attack soft fruit and the like tend to multiply rapidly in stagnant air. Such foodstuffs do in fact become mouldy when retained in a lidded container for any prolonged length of time.

The present invention seeks to provide a container which provides the advantages known in such marketing systems but without the disadvantages enumerated above.

It has been found that if it is possible to create a flow of air over the more vulnerable foodstuffs while they are in a lidded container, then there is less tendency to become mouldy, and fresh soft fruit was found to have at least one day of additional life when being transported from supplier to warehouse and store.

According to this invention we provide a plastics container, suitable for the transportation and storage of perishable goods, comprising a base goodsholding portion having a rim and a lid adapted to engage the rim, the rim and lid cooperating to provide air passageways into the container when the lid is closed and the upper surface of the lid having sufficient flexibility so that intermittent pressure thereon encourages air flow into said container. Preferably at least the lid of the container is of vacuum formed plastics sheet material.

Preferably the lid has a rim and the entry into the air passageways is shielded by the rim of the lid.

In one preferred form of the invention the rim of said base portion has an upper surface provided with upwardly extending projections at intervals therearound and said lid has a rim having a shoulder which bears on said upwardly extending projections but stands proud of the remaining upper surface of the base rim to provide the air passageways. Preferably the shoulder is of a width greater than that of said upper surface of the base rim and preferably said shoulder terminates in a downturned skirt.

In an alternative form of the invention, the lid of the container has side walls formed with hollow projections defining channels which extend to the rim of the lid, so that when the lid is placed on the rim of the base, air passageways exist between said base rim and lid rim. Preferably the lid rim has a peripheral shoulder and dependent skirt, the hollow projections extending downwardly into the skirt, the skirt being adapted to fit snugly over the base rim except in the region of the hollow projections where there is left a spacing for passage of air.

In the drawings:

Figure 1 is a plan view of the bottom half of a container according to a first embodiment of the invention;
Figure 2 is a view, from the underside, of a lid of a container of the first embodiment;
Figure 3 is a section of an assembled container taken on the line III-III of Figure 1;
Figure 4 is a view in section of parts of the container to a larger scale;
Figure 5 is a plan view of part of the bottom of a container according to a second embodiment;
Figure 6 is an underside view of part of a lid of the second embodiment container;
Figure 7 is a section view on the line VII-VII of Figure 5 but of an assembled container;
Figure 8 is a perspective view of part of the lid of the second embodiment, and
Figure 9 is a part section view to a larger scale than that of Figure 7.

Referring to Figures 1 to 4 of the drawings, a container 2 comprises a substantially rectangular section base 4 and a lid 6.

The base 4 is formed with a floor 8, end walls 10 and side walls 12. Around the topmost periphery of the walls is an outwardly turned rim 34 which has formed thereon a number of upwardly extending projections. Four such projections 16 are located at the corners of the rim and two further projections 18 midway along the side walls 12. Each projection 16 provides a flat upper surface 20 and, similarly, each projection 18 provides a flat upper surface 22. Between the projections 18 and 20 are upper surfaces 24 of the rim at a lower height than the surfaces 20, 22.

The lid 6 of the container is seen in plan view, from the underside, in Figure 2 and in section in Figures 3 and 4. The lid has an upper face 26, downturned side and end walls 28, an out-turned shoulder 30 and a further down-turned rim 32.

When the lid 6 is assembled on the container base 4 as shown in Figures 3 and 4, the shoulder 30 is seated on the faces 20 and 22 of the projections 16 and 18. As seen clearly in Figure 4, the shoulder thus lies proud of surfaces 24 and a gap 34 is provided between the surfaces 24 and the down-turned rim 32 so that air is able to flow through this gap. Similarly, although not illustrated, similar gaps exist between those surfaces 24 on the sides 12 of the base and the associated rim 32 on the lid. The direction of air flow is indicated by the arrows in Figure 4.

It is found that when the containers, filled with their soft fruit contents, are stacked for transport, for example in a delivery van, the vibrations imparted to the containers as the van is travelling, particularly over uneven and bumpy road surfaces, causes the lids, which have some flexibility, to be compressed and released, after the fashion of a bellows, by those containers in the stack above. This imparts a "panting" effect whereby air is pushed out of and sucked into the container through the gaps 34 and flows over the top of the foodstuffs, thus keeping them aerated and inhibiting the build up of mould.

In the embodiment shown in Figures 5 to 9, the container 102 comprises a base 104 and a lid 106. The base is formed with a continuous rim 110 having a flat upper surface 120 and the walls 110, 112 are provided with stiffening ribs 113.

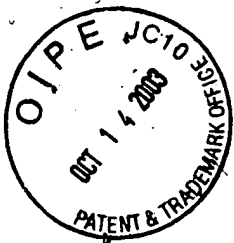
The lid 106 has an upper face 126 and around its periphery are formed hollow projections 107 which define channels 109. The lid is also formed with a shoulder 130 and when the lid 106 is assembled on the base 104, that shoulder rests on the surface 120, as seen clearly in Figure 9. There are thus created passageways 134 in the region of projections 107, leading to channels 109, through which air may flow as indicated by the arrows in Figure 9.

This construction therefore also allows the "panting" described with reference to the first embodiment, with its beneficial effect on, e.g., soft fruits stored in the containers.

Whilst it is recognised that a similar effect could be obtained by simply punching holes in the surface of the lid to create an air-flow passage above the stored foodstuffs, this would involve an extra operation in the manufacture of the containers, adding to the cost of production and the plant required. Furthermore, there is an inherent danger that punched-out scraps of plastics material could occasionally be left in the container to contaminate eventual packaged foodstuffs. It is therefore preferable that the air-flow passages be formed within the container or lid by moulding rather than by punching.

The containers and lids embodying the invention are ideally suited for manufacture by a vacuum-forming operation, though any other suitable manufacturing process may be used to provide such containers.

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Fig. 1.

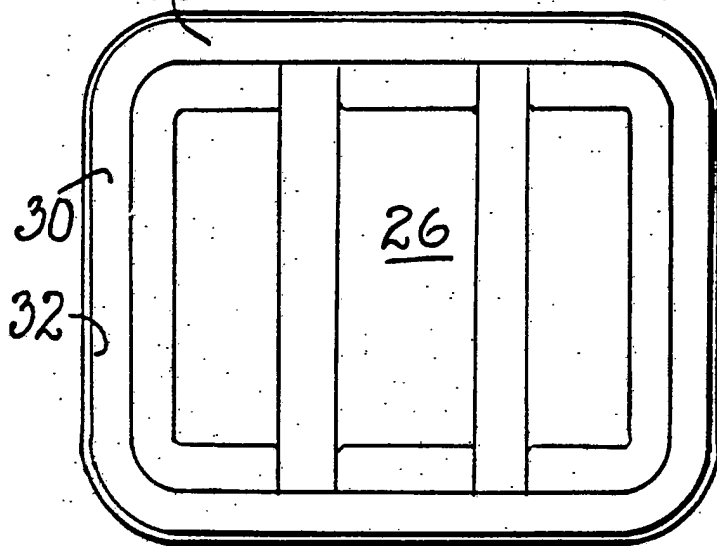
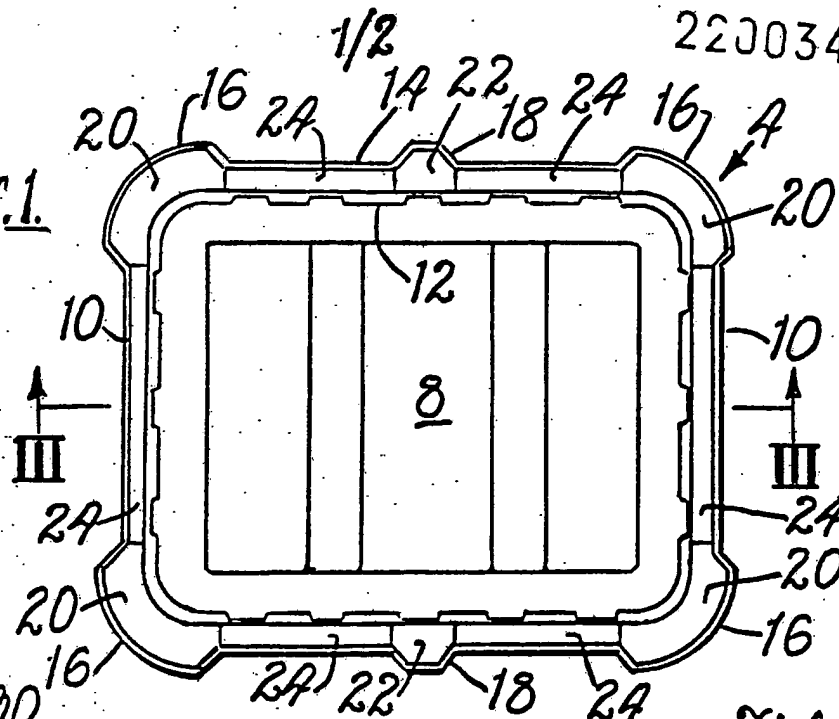


Fig. 2.

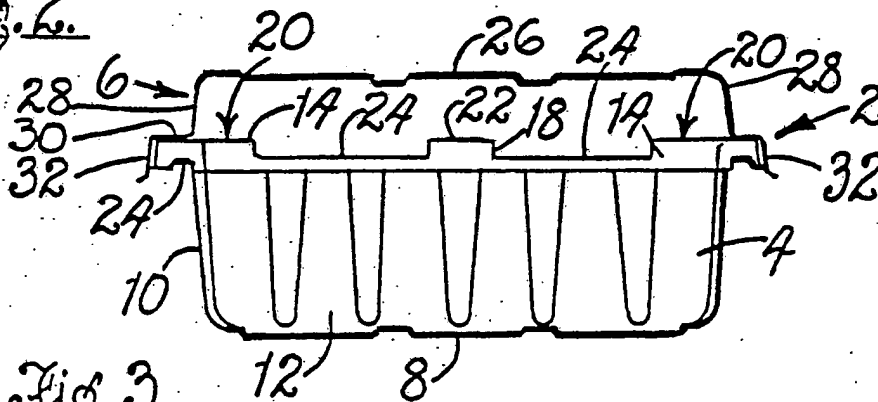


Fig. 3.

Fig. 4.

